

## Claims

1. A method for processing Create Packet Data Protocol (PDP) Context Request, comprising:

1) storing Cause values of different versions as well as definitions for all the  
5 Cause values in the GSN (GPRS Support Node) receiving Create PDP Context Request messages;

2) after receiving the Create PDP Context Request, the GSN checking the version number, performing internal processing, and filling a Cause value of the identical version in Create PDP Context Response according to the processing result and the  
10 version number of the Create PDP Context Request;

3) encapsulating the Create PDP Context Response, and returning it to the sender of the Create PDP Context Request.

2. The processing method according to claim 1, wherein the different versions comprise the GTPv0 version and GTPv1 version; and the definition for Cause values  
15 in the GTPv1 version includes at least the following descriptions:

a) "All dynamic PDP addresses are occupied" indicates that no free dynamic PDP address is available in the GSN which can be allocated to the UE (User Equipment) initiating an activation;

b) "No memory is available" indicates that no enough memory is available in the  
20 GSN to support the activation;

c) "No resources available" indicates that some kinds of resources have been used up temporarily and the activation can not be supported.

3. The processing method according to claim 1, wherein the Step 2) comprises:

2a) after receiving the Create PDP Context Request message, the GSN checking  
25 the version number of the message according to the message header thereof, if it is the GTPv1 version, performing Steps 2b)~2g) only; otherwise, performing Steps 2h)~2k) only;

2b) the GSN performing internal processing and getting a processing result;

2c) if the processing result is that the GSN has created a PDP context successfully, the Cause value is set as "Request Accepted";

2d) if the processing result is that the GSN fails to create a PDP context because  
5 no free dynamic PDP address is available, the Cause value is set as "All dynamic PDP addresses are occupied";

2e) if the processing result is that the GSN fails to create a PDP context because there is no enough memory available, the Cause value is set as "No memory is available";

10 2f) if the processing result is that the GSN fails to create a PDP context because of lack of resources, the Cause value is set as "No resources available";

2g) if the processing result is that the GSN fails to create a PDP context due to reasons other than the above, the Cause value is set according to the existing descriptions in the specifications of the GTPv1 version;

15 2h) the GSN performing internal processing and getting a processing result;

2i) if the processing result is that the GSN has created a PDP context successfully, the Cause value is set as "Request Accepted";

2j) if the processing result is that the GSN fails to create a PDP context because no free dynamic PDP address is available, or there is no enough memory available, or  
20 because of lack of other resources, the Cause value is set as "No resources available";

2k) if the processing result is that the GSN fails to create a PDP context due to reasons other than the above, the Cause value is set according to the existing descriptions in the specifications of the GTPv0 version.

4. The processing method according to claim 1, wherein the Step 2) comprises:

25 2A) the GSN receiving the Create PDP Context Request message;

2B) the GSN performing internal processing and getting a processing result;

2C) if the processing result is that the GSN has created a PDP context successfully, the Cause value is set as "Request Accepted";

5 2D) if the processing result is that the GSN fails to create a PDP context because no free dynamic PDP address is available, reading the Create PDP Context Request message and checking the version number of the message according to the message header thereof, if it is the GTPv1 version, the Cause value is set as "All dynamic PDP addresses are occupied"; otherwise, it is the GTPv0 version, and the Cause value is set as "No resources available";

10 2E) if the processing result is that the GSN fails to create a PDP context because there is no enough memory available, reading the Create PDP Context Request message and checking the version number of the message according to the message header thereof, if it is the GTPv1 version, the Cause value is set as "No memory is available"; otherwise, it is the GTPv0 version, and the Cause value is set as "No resources available";

15 2F) if the processing result is that the GSN fails to create a PDP context due to reasons other than the above, checking the version number and setting the Cause value according to the existing descriptions in the specifications of the GTPv0 or GTPv1 version.

20 5. The processing method according to claims 1, 2, 3, and 4, wherein the GSN comprises a Gateway GPRS Supporting Node (GGSN) or a Serving GPRS Support Node (SGSN).